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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,996	02/21/2007	Otfried Schwarzkopf	825-00191	9583

7590 03/05/2009
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Suite 1100
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Milwaukee, WI 53202

EXAMINER

LESLIE, MICHAEL S

ART UNIT	PAPER NUMBER
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3745

MAIL DATE	DELIVERY MODE
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03/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,996

Applicant(s)

SCHWARZKOPF ET AL.

Examiner

MICHAEL LESLIE

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 2-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date 3/27/2007
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Drawings

The drawings are objected to because "Figur" should be --Figure-- (All drawings). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because it exceeds the limit of 150 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claim 6 is objected to because of the following informalities: Claim 6, Lines 2 and 3, "g/mm²" should be --gmm²---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 5, 11, and 16, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 5, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 5, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding claims 9 and 16, the phrase "especially" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 3 recites the broad recitation greater than 250 gmm²/g and the claim also recites especially greater than 400 to 500 gmm²/g, which is the narrower statement of the range/limitation. Further, claim 6 recites the broad recitation greater than 100,000 g/mm², and the claim also recites especially greater than 200,000 to 250,000 g/mm², which is the narrower statement of the range/limitation. Claim 7 recites the broad recitation greater than 30 g to 90 g and the claim also recites especially 35 g to 50 g, which is the narrower statement of the range/limitation.

Claim 14 recites "(= rotating mass)" and "(= translational mass)", it is unclear whether they are intended to further limit the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 4, 5, 9-13, 15, and 16, as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by Ota et al (6139282).

Ota et al discloses an axial piston compressor having a housing (11) and compressor unit arranged in the housing, driven by a drive shaft (16), and including pistons (32), a cylinder block (12), and a swash plate (21), wherein for a predetermined mass of the swash plate moved in rotation and/or a particular mass moved in translation the mean radius governed by the geometry and/or by the density distribution and/or the mean height of the swash plate or of the pivotal portion thereof is/are so selected that the centrifugal forces occurring on rotation of the swash plate are sufficient to counteract the pivotal movement of the swash plate to provide deliberate regulation and thereby to influence the piston stroke. Wherein the swash plate is a swash ring, the swash plate is made from two or more different materials (Figs. 2, 7), the center of gravity of the swash plate is located in or at least close to the axis of the drive shaft, the radially outer parts (26) consist of denser material than the radially inner parts (21), the inner and outer diameters of the swash ring are each selected maximally within the external conditions, when the swash plate is made from at least two materials of different densities, one material has a density of $6-8 \text{ g/cm}^3$, whereas the other material has a density greater than $6-8 \text{ g/cm}^3$, and the quotient $M_{\text{sw}}/M_{\text{k,ges}}$ is ≥ 1 (Column 2, Lines 52-65). The distance between the piston axis and drive shaft axis is

described by the relation $R = (r_a + r_i)/2$ (in view of the face sections (21b) of the swash ring (Fig. 2)).

Claims 2, 8, 9, 11, 13, and 16, as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by Kuhn et al (2002/0038600).

Kuhn et al discloses an axial piston compressor having a housing (2) and compressor unit arranged in the housing, driven by a drive shaft (8), and including pistons (15), a cylinder block (18), and a swash plate (11), wherein for a predetermined mass of the swash plate moved in rotation and/or a particular mass moved in translation the mean radius governed by the geometry and/or by the density distribution and/or the mean height of the swash plate or of the pivotal portion thereof is/are so selected that the centrifugal forces occurring on rotation of the swash plate are sufficient to counteract the pivotal movement of the swash plate to provide deliberate regulation and thereby to influence the piston stroke. Wherein the swash plate is a swash ring, the mean radius and/or the mean height of the swash plate is/are so dimensioned that the centrifugal forces occurring on rotation of the swash plate, which forces counteract the pivotal movement of the swash plate, are greater than the forces acting on the swash plate from the pistons, which forces cause further extending pivotal movement, so that with increasing speed of rotation the piston stroke is reduced by an amount such that an approximately constant delivered quantity is established, the center of gravity of the swash plate is located in or at least close to the axis of the drive shaft, the inner and outer diameters of the swash ring are each selected maximally within the external conditions, and the quotient $M_{sw}/M_{k,ges}$ is ≥ 1 .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 6, 7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al (6139282) in view of Design Choice.

Ota et al discloses an axial piston compressor as described above and further teaches that the swash plate is made of a material having a density of $6\text{-}8\text{g/cm}^3$, but does not explicitly teach that the quotient moment of inertia/mass of the swash plate is at least about $250\text{ gmm}^2/\text{g}$, the swash plate has a mass moment of inertia greater than $100,000\text{ g/mm}^2$, the pistons have a mass of about 30 g to 90 g, or the mass inertia of the swash plate in relation to an axis perpendicular to the drive shaft axis, and the total piston mass is at least about $250\text{-}300\text{ gmm}^2/\text{g}$.

Since applicant has not disclosed that having the above noted dimensions solves any stated problem or is for any particular purpose above the fact that the dimensions suit a particular application of the compressor and it appears that the compressor of Ota et al would perform equally well with the dimensions as claimed by applicant, it would have been an obvious matter of design choice to modify the compressor of Ota et al by utilizing the dimensions as claimed for the purpose of regulating compressor output.

Claims 3, 4, 6, 7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn et al (2002/0038600) in view of Design Choice.

Kuhn et al discloses an axial piston compressor as described above, but does not explicitly teach that the swash plate is made of a material having a density of $6-8\text{g/cm}^3$, the quotient moment of inertia/mass of the swash plate is at least about $250\text{ gmm}^2/\text{g}$, the swash plate has a mass moment of inertia greater than $100,000\text{ gmm}^2$, the pistons have a mass of about 30 g to 90 g, or the mass inertia of the swash plate in relation to an axis perpendicular to the drive shaft axis, and the tKuhnl piston mass is at least about $250-300\text{ gmm}^2/\text{g}$.

Since applicant has not disclosed that having the above noted dimensions solves any stated problem or is for any particular purpose above the fact that the dimensions suit a particular application of the compressor and it appears that the compressor of Kuhn et al would perform equally well with the dimensions as claimed by applicant, it would have been an obvious matter of design choice to modify the compressor of Kuhn et al by utilizing the dimensions as claimed for the purpose of regulating compressor output.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL LESLIE whose telephone number is (571)272-4819. The examiner can normally be reached on M-F 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ML
March 2, 2009

/Michael Leslie/
Primary Examiner, Art Unit 3745